

## COURSE INFORMATION LETTER

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| <b>University:</b> P. J. Šafárik University in Košice   |   |
| <b>Faculty:</b> Faculty of Medicine   |   |
| <b>Course ID:</b> ULBL/<br>MHB-DM1/15   | <b>Course name:</b> Medical and Human Biology 1 |
| <b>Course type, scope and the method:</b><br><b>Course type:</b> Lecture / Practice<br><b>Recommended course-load (hours):</b><br><b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28<br><b>Course method:</b> present  |   |
| <b>Number of ECTS credits:</b> 3  |   |
| <b>Recommended semester/trimester of the course:</b> 1.   |   |
| <b>Course level:</b> I.II.  |   |
| <b>Prerequisites:</b>   |   |
| <b>Conditions for course completion:</b><br>For the successful completion of the subject, as "prerequisite for registration" in the follow-up subject Biology 2, it is necessary:<br>100% active participation in all practical lessons<br>For successful completion of the subject, as "prerequisite for completion of the subject" Biology 2, it is necessary:<br>obtaining at least 60% from each test   |   |
| <b>Learning outcomes:</b><br>To introduce the basic concepts of cell biology, including cell structure, macromolecules, genetics, molecular biology, development and cell communications. To give students a thorough grounding in the theoretical and practical foundations of basic genetics. Students have acquired an understanding of the major concepts in cell and molecular biology and have obtained basic information related to genetics and molecular biology methods in clinical practice.   |   |
| <b>Brief outline of the course:</b><br>Molecular Biology – common characteristics of biopolymers, the structure and function of saccharides and lipids, amino acids, polypeptides, proteins, primary, secondary, tertiary and quaternary structure of protein molecules, function of proteins. Nucleic acids, primary structure of DNA and RNA, their genetic function. Cell structure – prokaryotic and eukaryotic cells. Membrane cell organelles, their structure and function, plasmatic membrane, membrane receptors. General characteristic of biomembranes, molecular structure of biomembranes; movement of molecules through the membrane, active and passive transport, protein membrane channels, endocytosis, exocytosis. Replication of DNA. Structure of eukaryotic chromosome, human karyotype. Cell reproduction, cell cycle, control of cell cycle, mitosis. Meiosis, gametogenesis, spermatogenesis, oogenesis. Expression of genetic information, transcription, posttranscriptional processing of mRNA, translation, synthesis of proteins, posttranslation modifications, regulation of gene expression. Application of molecular biology methods in clinical genetics. The basic principles of Epigenetics. Cell differentiation, aging and death of the cells. |   |
| <b>Recommended literature:</b><br>Židzik J. et al.: Medical Biology and Genetics. Second edition, Equilibria, 2015, 296 p.<br>Mičková et al.: Biology: practical lessons. Second edition, Equilibria, 2020, 98 p.   |   |

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| <b>Course language:</b>   |       |       |       |       |       |       |
| <b>Notes:</b>   |       |       |       |       |       |       |
| <b>Course assessment</b>  |       |       |       |       |       |       |
| Total number of assessed students: 626  |       |       |       |       |       |       |
| abs   | abs-A | abs-B | abs-C | abs-D | abs-E | neabs |
| 38.02   | 0.32  | 3.19  | 11.5  | 15.65 | 17.41 | 13.9  |
| <b>Provides:</b> prof. RNDr. Ján Šalagovič, PhD., RNDr. Helena Mičková, PhD., RNDr. Jozef Židzik, PhD., RNDr. Lucia Klimčáková, PhD., RNDr. Viera Habalová, PhD., doc. RNDr. Peter Solár, PhD., RNDr. Martina Šemeláková, PhD., RNDr. Eva Slabá, PhD. |       |       |       |       |       |       |
| <b>Date of last modification:</b> 06.03.2023  |       |       |       |       |       |       |
| <b>Approved:</b>  |       |       |       |       |       |       |